

ThunderVOLT[™]

24 Volt Cordless System

BLACK & DECKER

ThunderVOLT[™]

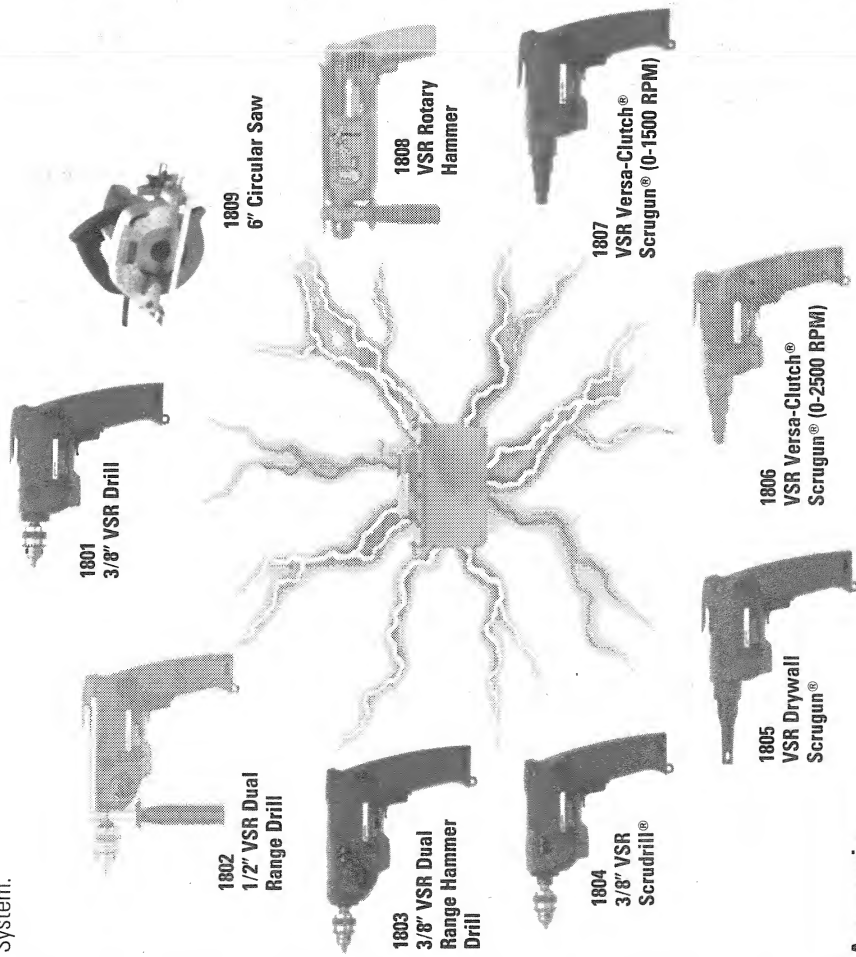
24 Volt Cordless System

Black & Decker introduces a breakthrough in power tool technology.

THUNDERVOLT[™] advances the state of the art with a one hour fast charger, a dual output (12V & 24V) battery pack and 10 heavy duty power tools and accessories in one 24 Volt High Performance Cordless System.

In all applications where portable power, high performance, flexibility and safety are critical, THUNDERVOLT does the job right. All day. Every day.

THUNDERVOLT is tomorrow's mobile power tool technology—today. From Black & Decker.



Accessories

1810 Halogen Work Light	98028 Holster
1820 Thundervolt Kit	98031 6 foot Coiled Cable (or cordset)
98009 Battery Charger for Lead Acid Batteries	98032 13 foot Cable (or cordset)
98021 12/24 Volt Battery Pack	98034 Charger from 12 Volt Vehicle Source
98024 Battery Pack Belt and Pouch	98035 Charging Clip Adaptor
98027 Battery Pack Shoulder Strap	

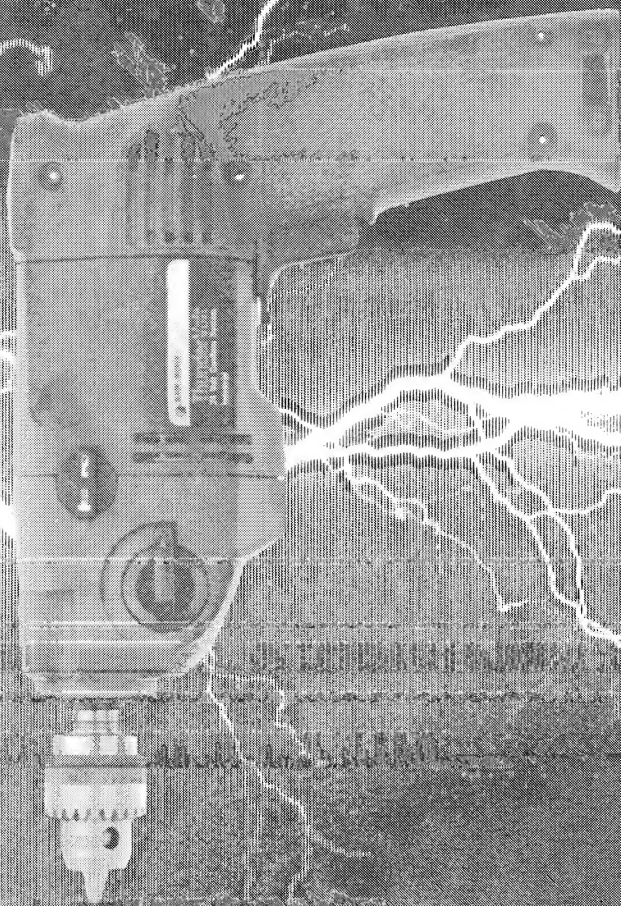


Black & Decker (U.S.) Inc., U.S. Power Tools Group, 10 North Park Drive, P.O. 21030-0798, Hunt Valley, MD 21030 U.S.A.

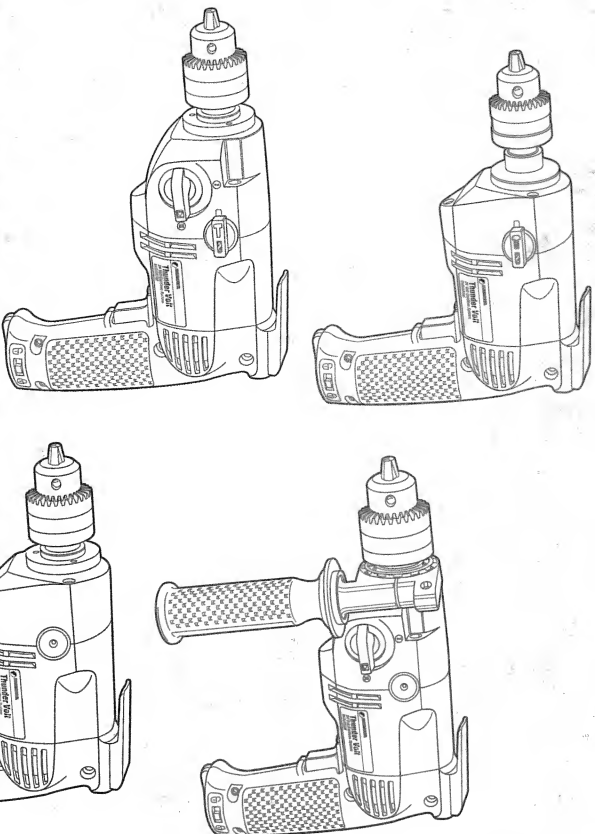
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Instruction Manual



- 1801 3/8" VSR Drill
- 1802 1/2" VSR Dual Range Drill
- 1803 3/8" VSR Dual Range Hammer Drill
- 1804 3/8" VSR Scruddrill[®]



Thanks for Selecting a Black & Decker ThunderVolt™ Drill.

ThunderVolt is a whole new approach to cordless tools that has been engineered to be the best, most advanced system in the world. The system employs a 12/24 volt battery pack that recharges in one hour and powers a full range of drills, hammer drills, screwdrivers, and even a circular saw and a rotary hammer.

The battery pack can be carried on a shoulder strap or worn in a belt pouch so that the system is completely portable for use at the most remote locations.

The enclosed instruction sheet "12 & 24 Volt ThunderVolt System" describes, in detail, the usage of the battery pack, the 1 hour charger and the related accessories.

Your Black & Decker ThunderVolt drill has been built to Black &

Decker's exacting standards of quality to ensure years of superior performance.

With your new drill you can drill holes in practically any material you can name and you can buff, sand, polish, mix paint and drive screws with features like variable speed and reversing capability.

All this versatility and Black & Decker's inherent toughness make this drill every bit the professional that you are.

Please take the time to read this informative manual and pay particular attention to the safety rules we've provided for your protection.

Don't forget to send in your owner's registration card.

THANKS AGAIN FOR BUYING
BLACK & DECKER!

Lubrication

All ball bearings used are factory lubricated to last the life of the bearings. All needle bearings used receive their lubrication from the grease in the gear case. Clean and re-lubricate gear case yearly or whenever servicing requires the gear case to be removed. Use type and quantity of grease shown on Parts Bulletin packed with your tool.

Gear case is removed by removing the three screws from the front of the tool.

Warranty

Black & Decker (U.S.) Inc. warrants this product for one year from date of purchase. We will repair without charge, any defects due to faulty material or workmanship. Please return the complete unit, transportation prepaid, to any Black & Decker Service Center or Authorized Service Station listed under "Tools Electric" in the yellow pages. This warranty does not apply to accessories or damage caused where repairs have been made or attempted by others.

Like most Black & Decker tools, this tool is listed by Underwriters Laboratories to ensure that it meets stringent safety requirements.



This symbol on the nameplate means the product is listed by Underwriters Laboratories, Inc.

See 'Tools-Electric'
-Yellow Pages-
for Service & Sales



IMPORTANT SAFETY INSTRUCTIONS

WARNING: When using Electric Tools, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and personal injury, including the following:

READ ALL INSTRUCTIONS

1. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite injuries.
2. **CONSIDER WORK AREA ENVIRONMENT.** Don't expose power tools to rain. Don't use power tools in damp or wet locations. Keep work area well lit.
3. **GUARD AGAINST ELECTRIC SHOCK.** Prevent body contact with grounded surfaces. For example: pipes, radiators, ranges, refrigerator enclosures.
4. **KEEP CHILDREN AWAY.** All visitors should be kept away from work area. Do not let visitors contact tool or cord.
5. **STORE IDLE TOOLS.** When not in use, tools should be stored in dry, and high or locked-up place—out of reach of children.
6. **DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it was intended.
7. **USE RIGHT TOOL.** Don't force small tool or attachment to do the job of a heavy-duty tool. Don't use tool for purpose not intended, for example, don't use circular saw for cutting tree limbs or logs.
8. **DRESS PROPERLY.** Do not wear loose clothing or jewelry. They can be caught in moving parts. Rubber gloves and non-skid footwear are recommended when working outdoors. Wear protective hair covering to contain long hair.
9. **USE SAFETY GLASSES.** Also use face or dustmask if operation is dusty.
10. **DON'T ABUSE CORD.** Never carry tool by cord or yank it to disconnect from battery pack. Keep cord from heat, oil, and sharp edges.
11. **SECURE WORK.** Use clamps or a vise to hold work. It's safer than using your hand and it frees both hands to operate tool.
12. **DON'T OVERREACH.** Keep proper footing and balance at all times.
13. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for better and safe performance. Follow instructions for lubricating and changing accessories. Inspect tool cords periodically and if damaged have repaired by authorized service facility. Keep handles dry, clean, and free from oil and grease.
14. **DISCONNECT TOOLS.** When not in use, before servicing, and when changing accessories, such as blades, bits, cutters.
15. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
16. **AVOID UNINTENTIONAL STARTING.** Don't carry plugged-in tool with finger on switch. Be sure switch is off when plugging in.
17. **STAY ALERT.** Watch what you are doing. Use common sense. Do not operate tool when you are tired.
18. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorized service center unless otherwise indicated elsewhere in this instruction manual. Have defective switches replaced by authorized service center. Do not use tool if switch does not turn it on and off.
19. **DO NOT OPERATE** portable electric tools near flammable liquids or in gaseous or explosive atmospheres. Motors in these tools normally spark, and sparks might ignite fumes.

CAUTION: When drilling into walls, floors or wherever "live" electrical wires may be encountered, **DO NOT TOUCH THE CHUCK OR ANY FRONT METAL PARTS OF THE DRILL!** Hold the Drill only by the plastic handle to prevent shock if you drill into a "live" wire.

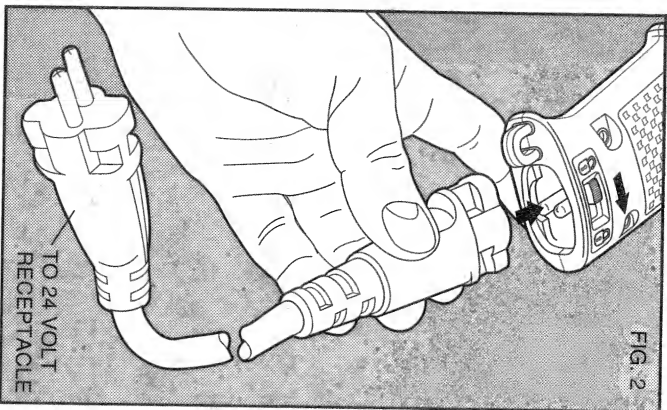
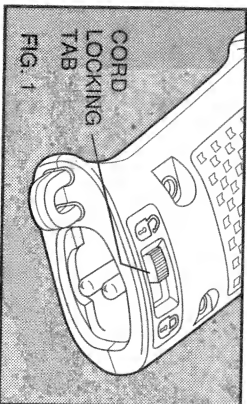
**SAVE THESE SAFETY RULES
FOR FUTURE USE.**

Detachable Cord Sets

The two available detachable cord sets for your tools are designed to be interchangeable depending on the proposed usage.

To attach either of the cords to any of the tools in this manual, follow the steps listed below.

1. Rotate the cord locking tab such that the tab is adjacent to the "unlocked" symbol, as shown in Figure 1.

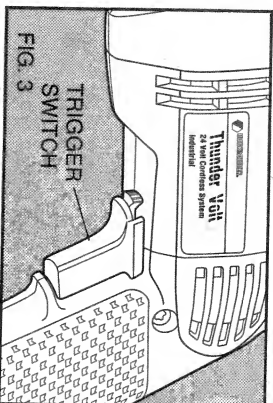


2. Insert the cord, as shown in the figure and rotate the locking tab until it is adjacent to the "locked" symbol, as shown in the figure.

Attach the other end of the cord to the battery pack in the same way making sure that you insert the cord into the 24 volt receptacle in the battery pack (see Figure 2). **NOTE:** All of the tools discussed in this manual are designed to operate on 24 volts only. For a more detailed description of how to use the battery pack, refer to the enclosed "12 & 24 Volt ThunderVolt System" instruction sheet.

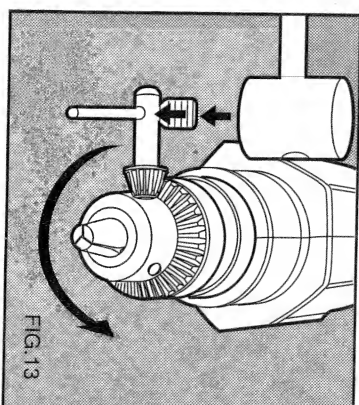
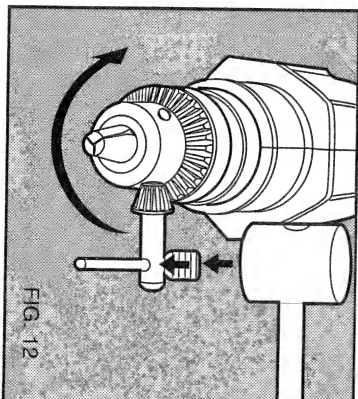
Switches

To start tool, depress trigger switch; to stop tool, release trigger, as shown in Figure 3.



The 1801 Drill and the 1804 Scrudrill are standard variable speed reversing tools. The range of the 1801 is from 0 to 1,200 RPM and the range of the 1804 is from 0 to 1500 RPM.

The 1802 1/2" drill and the 1803 3/8" Hammer Drill are dual range variable speed reversing tools. The low speed range on each is from 0 to 500 RPM and the high speed range is from 0 to 1,200 RPM. To select the low range setting on either of these two tools, turn off the tool, and rotate the range selector dial, shown in Figure 4, to align with the number "I" or the "II". Any other position of the dial will result in seriously damaged gears.



Accessories

The accessories listed in this manual are available at extra cost from your local dealer or Black & Decker Service Center. A complete listing of service centers is included on the owner's registration card packed with your tool.

If you need assistance in locating any accessory, please contact: Black & Decker (U.S.) Inc., User Services Department, 626 Hanover Pike, P.O. Box 618, Hampstead, MD 21074-0618

Recommended accessories for your tool are shown in this manual (**CAUTION:** The use of any other accessory or attachment might be hazardous.) For safety in use, the following accessories should be used only in sizes up to maximums shown in the table below.

Maximum Recommended Capacities

TOOL CAPACITY	1/2"	3/8"
R.P.M.	0-1200	0-1200
BITS, METAL DRILLING	1/2"	3/8"
WOOD, FLAT BORING	1 1/2"	1 1/4"
BITS, MASONRY DRILLING	9/16"	9/16"
HOLE SAWS	3"	1 1/2"

ACCESSORY MUST BE RATED FOR USE AT SPEED EQUAL TO OR HIGHER THAN NAMEPLATE R.P.M. OF TOOL WITH WHICH IT IS BEING USED.

WIRE WHEEL BRUSHES
WIRE CUP BRUSHES
BUFFING WHEELS
RUBBER BACKING PADS

4" Diameter Maximum
3" Diameter Maximum
3" Diameter Maximum
4 5/8" Diameter Maximum

Drilling In Masonry

Use carbide tipped masonry bits at low speeds. Keep even force on the drill but not so much that you crack the brittle materials. A smooth, even flow of dust indicates the proper drilling rate.

Side Handle

CAUTION: Always use side handle when provided and hold tool with both hands.

The side handle clamps to the front of the gear case as shown in Figure 8 and can be rotated 360 degrees to permit right or left hand use. Loosen the handle (counterclockwise) to loosen the clamp and rotate handle to desired position. Tighten handle.

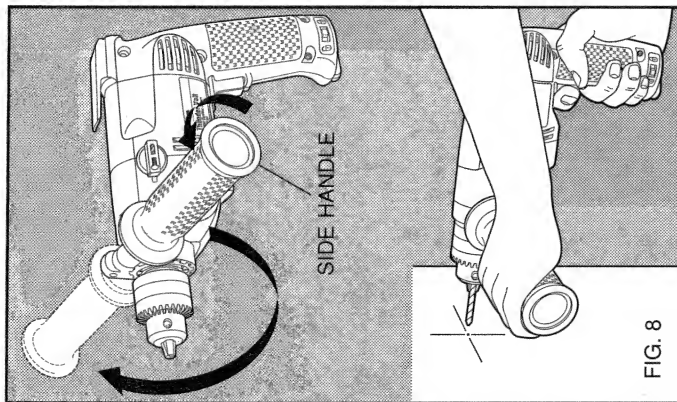
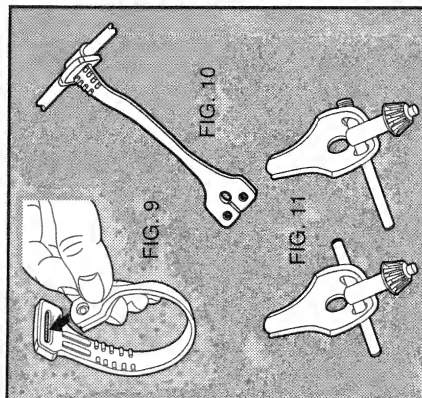


FIG. 8

Chuck Key Holder

1. Push double-hole end of Holder through slot in other end of Holder (Figure 9).
2. Slip loop over electric plug and draw loop tight around cord (Figure 10).
3. Push ends of Chuck Key Holder through two holes in end of Holder (Figure 11).



Chuck Removal

(Figures 12 and 13)

1. Place chuck key in chuck as shown in Figure 12. Using a wooden mallet or similar object, strike key sharply in a **CLOCKWISE** direction. This will loosen screw inside chuck.
2. Open chuck jaws fully, insert screwdriver (or 3/16" hex wrench if required) into front of chuck between jaws to engage screw head. Remove screw by turning clockwise (left-hand-thread).
3. Place key in chuck as shown in Figure 13. Using a wooden mallet or similar object, strike key sharply in a **COUNTER-CLOCKWISE** direction. This will loosen chuck so that it can be unscrewed by hand.

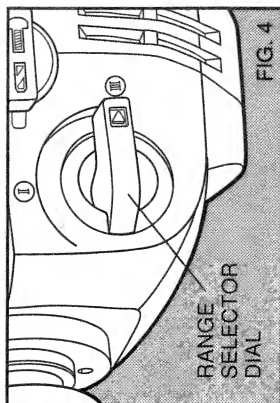


FIG. 4

After selecting the desired range, the 1803 and the 1802 dual speed tools will operate the same as the standard variable speed reversing tools.

The Variable Speed Trigger

Switch permits speed control — the farther the trigger is depressed, the higher the speed of the Drill. **NOTE:** Use lower speeds for starting holes without a center punch, drilling in metal or plastics, driving screws, drilling ceramics, or mixing paint. Higher speeds are better for drilling wood and composition boards, and for using abrasive and polishing accessories.

The **reversing lever** can be used to shift the tool into reverse for backing out screws and withdrawing drill bits from tight holes. To switch the tool from forward to reverse, turn off the tool and move the reversing lever shown in Figure 5 to the left, as viewed in the figure.

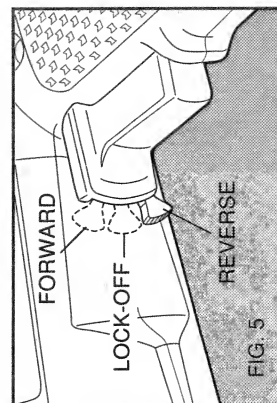


FIG. 5

The reversing lever performs two functions; it reverses the tool and it locks the tool off. The center position is "lock-off" and should be used whenever the tool is put away or left unattended (refer to Figure 5).

After any reversing operations, return the lever to the forward position.

1804 3/8" Scrudrill

The Scrudrill is a combination drill and screwdriver that you'll find to be a great time saver.

To use this tool as a drill, rotate the selector knob shown in figure 6 so that the pictured drill bit is toward the front of the tool. Use the drill as you would any drill.

To select the screwdriving mode, rotate the selector knob so that the pictured screw is toward the front of the tool as shown in the figure. In this mode the motor will run when the trigger is squeezed but the chuck will not turn until you push in on the tool and engage the clutch. This enables you to locate the screwdriver bit in the screw without turning the tool off.

Try a few test screws in scrap material until you develop a "feel" for the Scrudrill.

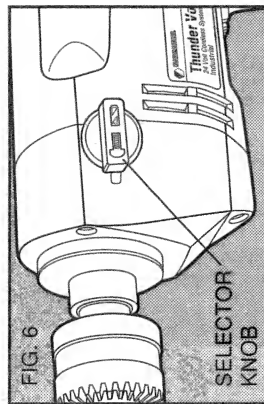


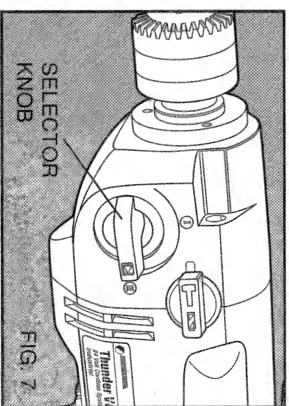
FIG. 6

1803 3/8" Hammer Drill

The Hammer Drill is a drill especially made for drilling holes in masonry where a slight impacting action is required. The Hammer Drill, as its name implies, can also be used as a standard drill.

To operate as a drill, rotate the selector knob shown in Figure 7 so that the pictured drill bit is toward the front of the tool. Operate as you would any standard drill.

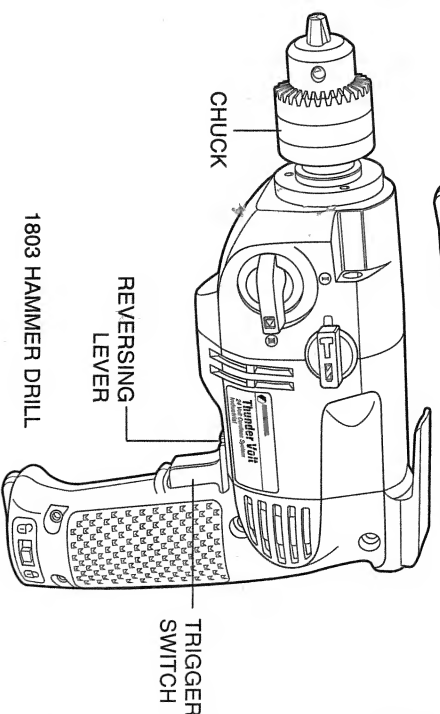
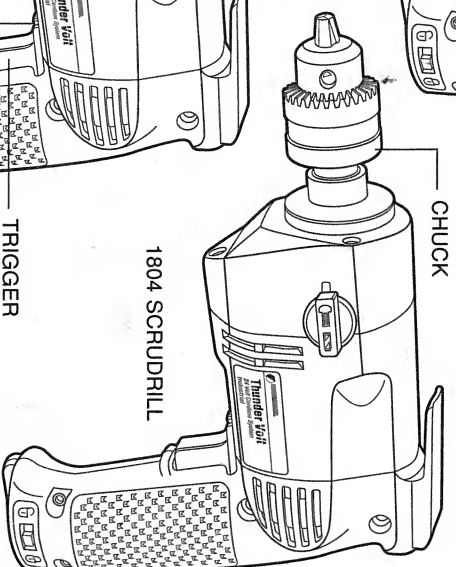
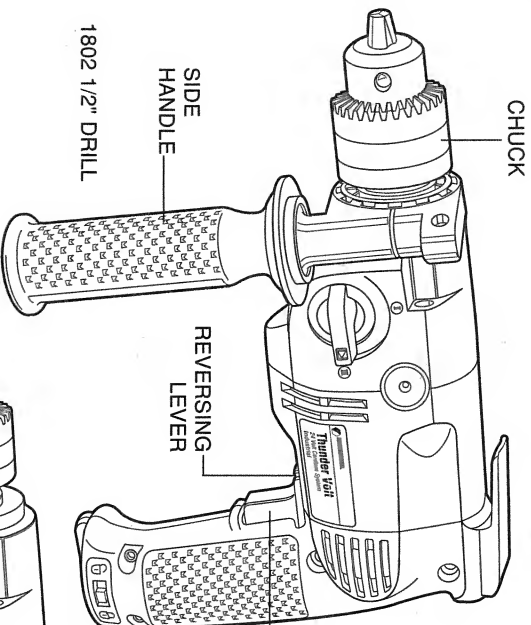
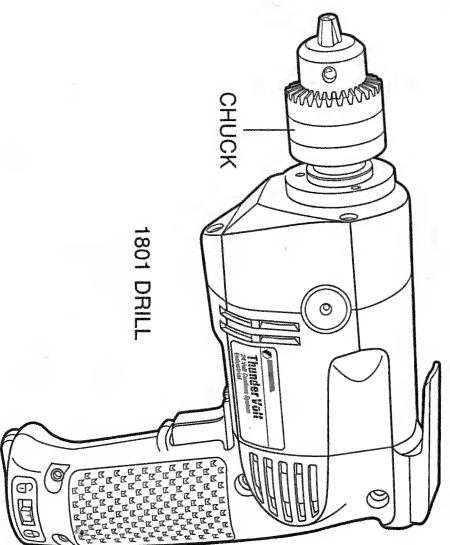
To operate the tool as a hammer drill, rotate the selector knob so that the pictured hammer is toward the front of the tool, as shown in the figure.



Operation

DRILLING

1. Always unplug the Drill when attaching or changing bits or accessories.
2. Use sharp drill bits only. For WOOD, use twist drill bits, spade bits, power auger bits, or hole saws. For METAL, use high speed steel twist drill bits or hole saws. For MASONRY, such as brick, cement, cinder block, etc., use carbide-tipped bits.
3. Be sure the material to be drilled is anchored or clamped firmly. If drilling thin material, use a wood "back-up" block to prevent damage to the material.
4. Always apply pressure in a straight line with the bit. Use enough pressure to keep drill biting, but do not push hard enough to stall the motor or deflect the bit.
5. Hold drill firmly to control the twisting action of the drill.
6. **IF DRILL STALLS**, it is usually because it is being overloaded or improperly used. **RELEASE TRIGGER IMMEDIATELY**, remove drill bit from work, and determine cause of stalling.



DO NOT CLICK TRIGGER OFF AND ON IN AN ATTEMPT TO START A STALLED DRILL — THIS CAN DAMAGE THE DRILL.

7. To minimize stalling or breaking through the material, reduce pressure on drill and ease the bit through the last fractional part of the hole.
8. Keep the motor running when pulling the bit back out of a drilled hole. This will help prevent jamming.
9. With Variable Speed Drills there is no need to center punch the point to be drilled. Use a slow speed to start the hole and accelerate by squeezing the trigger harder when the hole is deep enough to drill without the bit skipping out.

Chuck

Open chuck jaws by turning collar with fingers and insert shank of bit about 3/4" into chuck. Tighten chuck collar by hand. Place chuck key in each of the three holes, and tighten in clockwise direction. It's important to tighten chuck with all three holes. To release bit, turn chuck key counter clockwise in just one hole, then loosen the chuck by hand.

Drilling In Metal

Use a cutting lubricant when drilling metals. The exceptions are cast iron and brass which should be drilled dry. The cutting lubricants that work best are sulphurized cutting oil or lard oil; bacon-grease will also serve the purpose.

Drilling In Wood

Holes in wood can be made with the same twist drills used for metal. These bits may overheat unless pulled out frequently to clear chips from the flutes. For larger holes, use Power Drill Wood Bits. Work that is apt to splinter should be backed up with a block of wood.